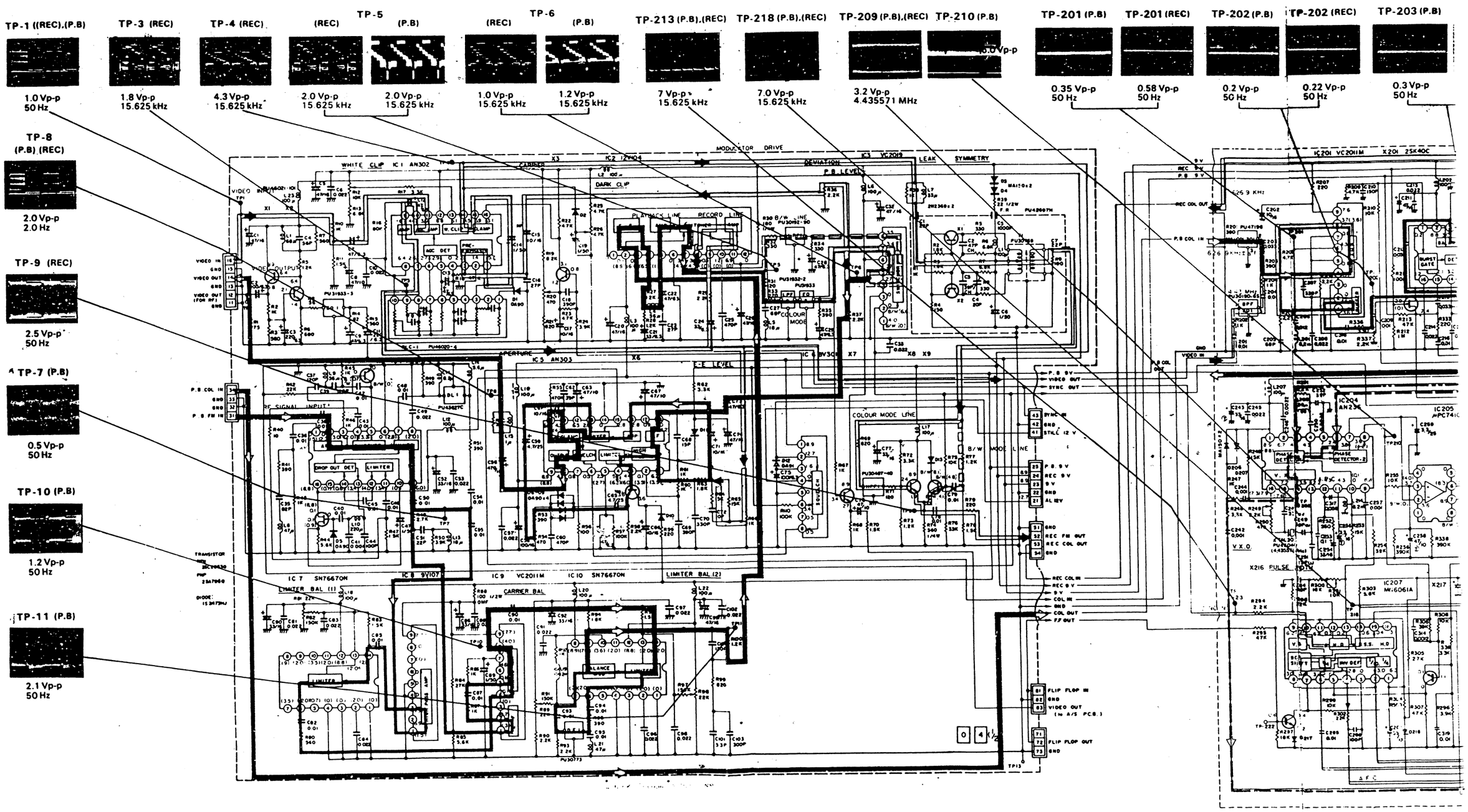
JVC

HR4100E

MODEL

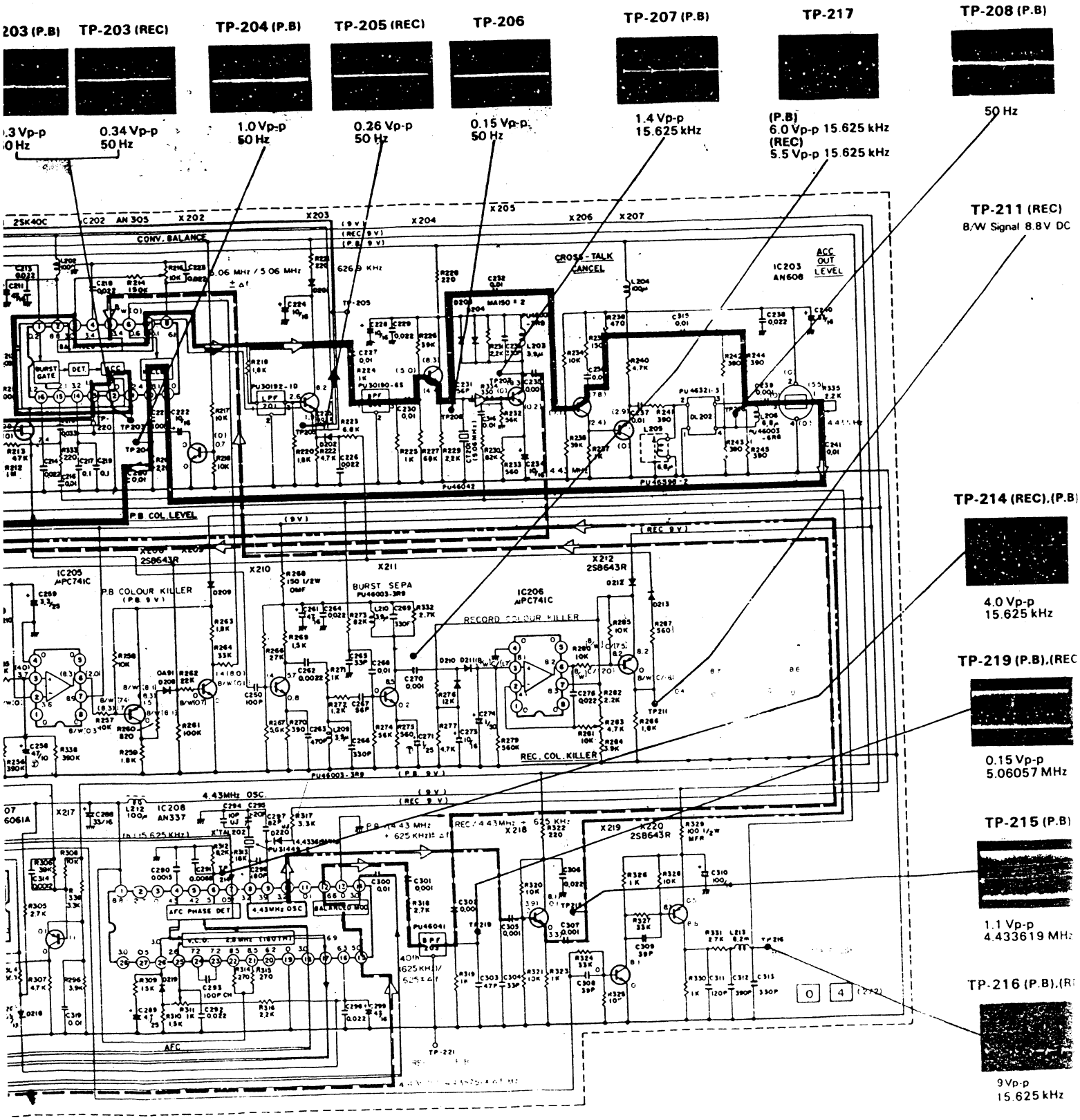
SERVICE MANUAL

17 LUMINANCE (Y) AND COLOR SCHEMATIC DIAGRAM HR-4100E.



1

2


TP-203 (P.B)
TP-203 (REC)
TP-204 (P.B)
TP-205 (REC)
TP-206
TP-207 (P.B)
TP-217
TP-208 (P.B)
.3 Vp-p
0 Hz
0.34 Vp-p
50 Hz
1.0 Vp-p
50 Hz
0.26 Vp-p
50 Hz
0.15 Vp-p
50 Hz
1.4 Vp-p
15.625 kHz
(P.B)
6.0 Vp-p 15.625 kHz
(REC)
5.5 Vp-p 15.625 kHz
50 Hz
TP-211 (REC)
B/W Signal 8.8V DC
TP-214 (REC),(P.B)
4.0 Vp-p
15.625 kHz
TP-219 (P.B),(REC
0.15 Vp-p
5.06057 MHz
TP-215 (P.B)
1.1 Vp-p
4.433619 MH
TP-216 (P.B),(R
9 Vp-p
15.625 kHz
CONV. BALANCE
CROSS-TALK CANCEL
ACC OUT LEVEL
IC203 AN608
IC205 μPC741C
IC206 μPC741C
IC208 AN337
P.B COLOUR KILLER
BURST SEPA
RECORD COLOUR KILLER
REC. COL. KILLER
4.43MHz OSC.
AFC PHASE DET
AFC
P.B COL. LEVEL

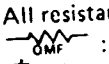
All reference numbers of components in colour circuit diagram are started from 20

All voltages are DC measured with a VTVM.

( ) represents the DC voltage measured at playback mode.

R332 is mounted on EK type only.

NOTE: Unless otherwise specified;
All PNP transistors are 2SA564Q.
All NPN transistors are 2SC829C.
All diodes are MA150LF
All resistance values are in ohms, 1/4 W, ±10%.



: Oxide metal film resistor

: Electrolytic capacitor

: Non-polar electrolytic capacitor

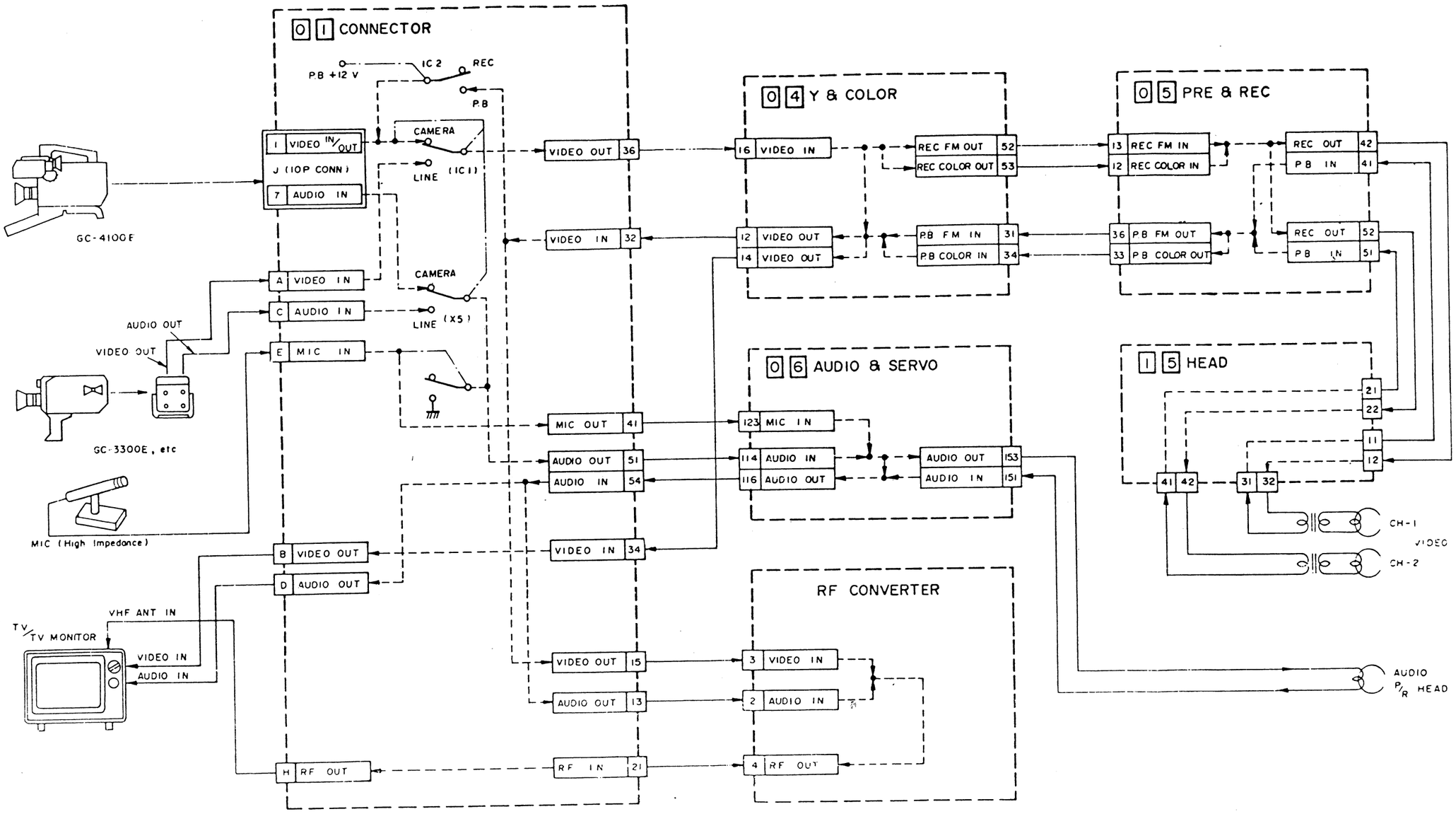
: Mylar or ceramic capacitor

: Playback mode signal path and APC signal path

: Record mode signal path

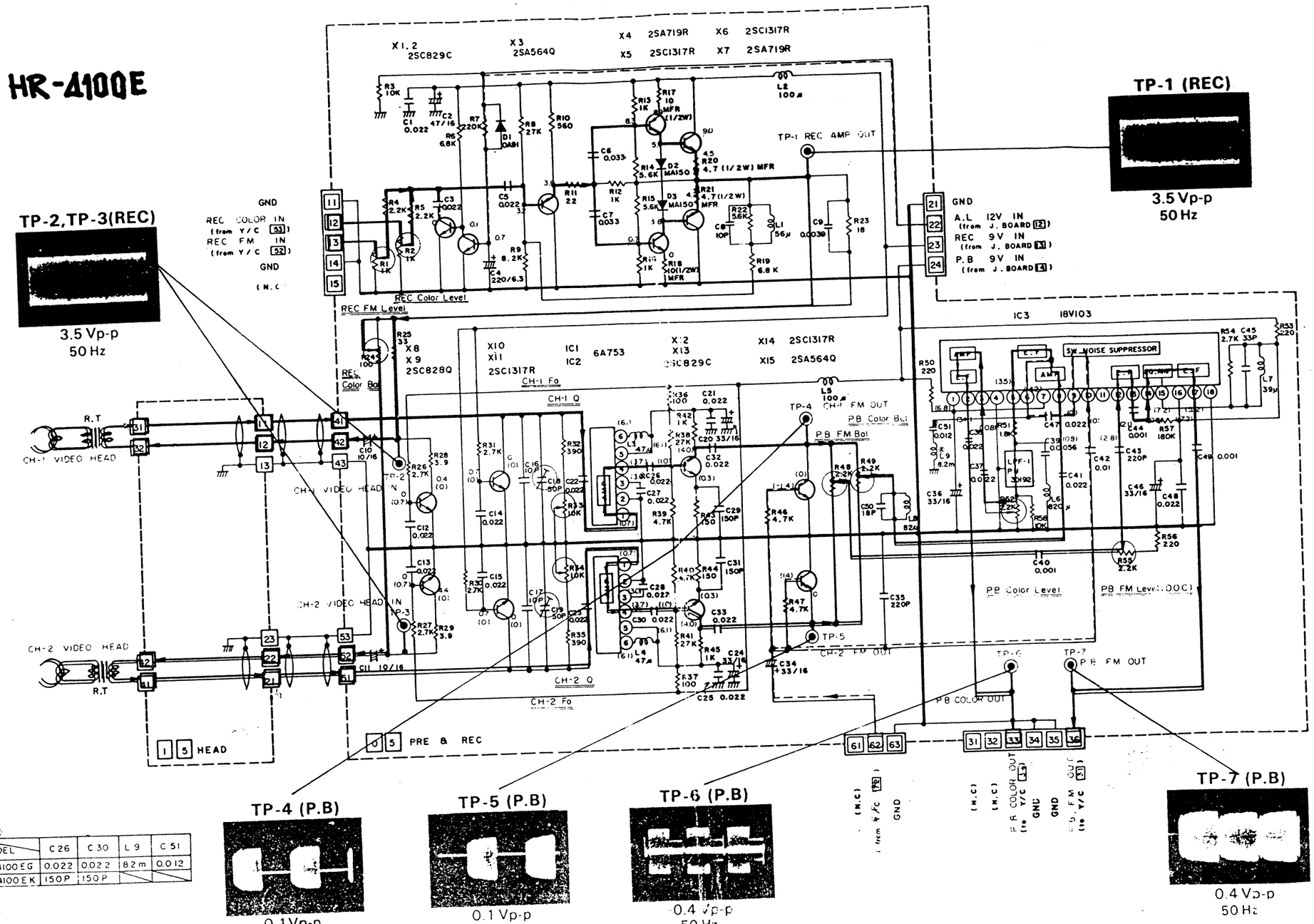
SIGNAL LINE

HR-4100E



HR-4100E

PRE AND RECORD SCHEMATIC DIAGRAM

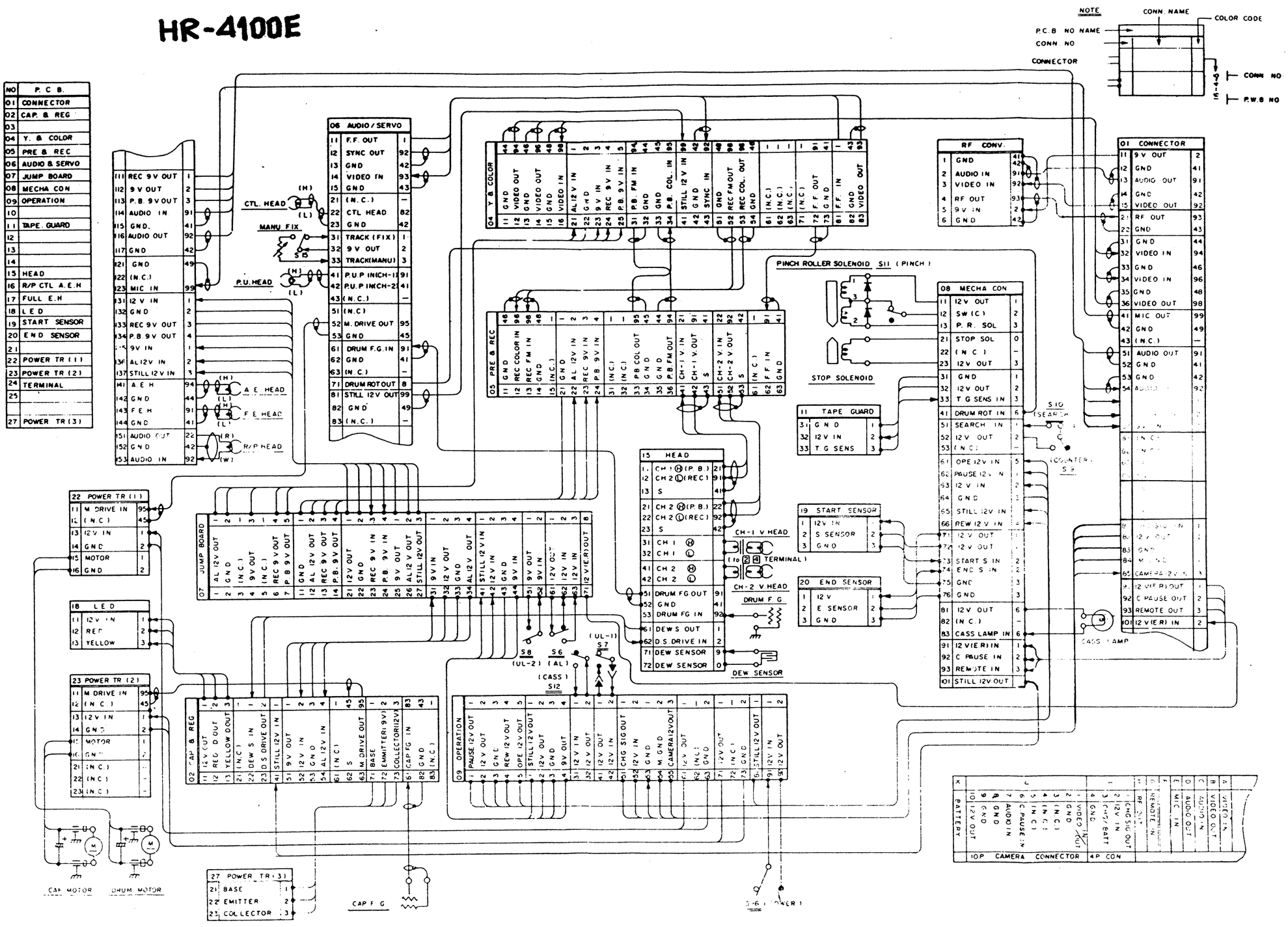


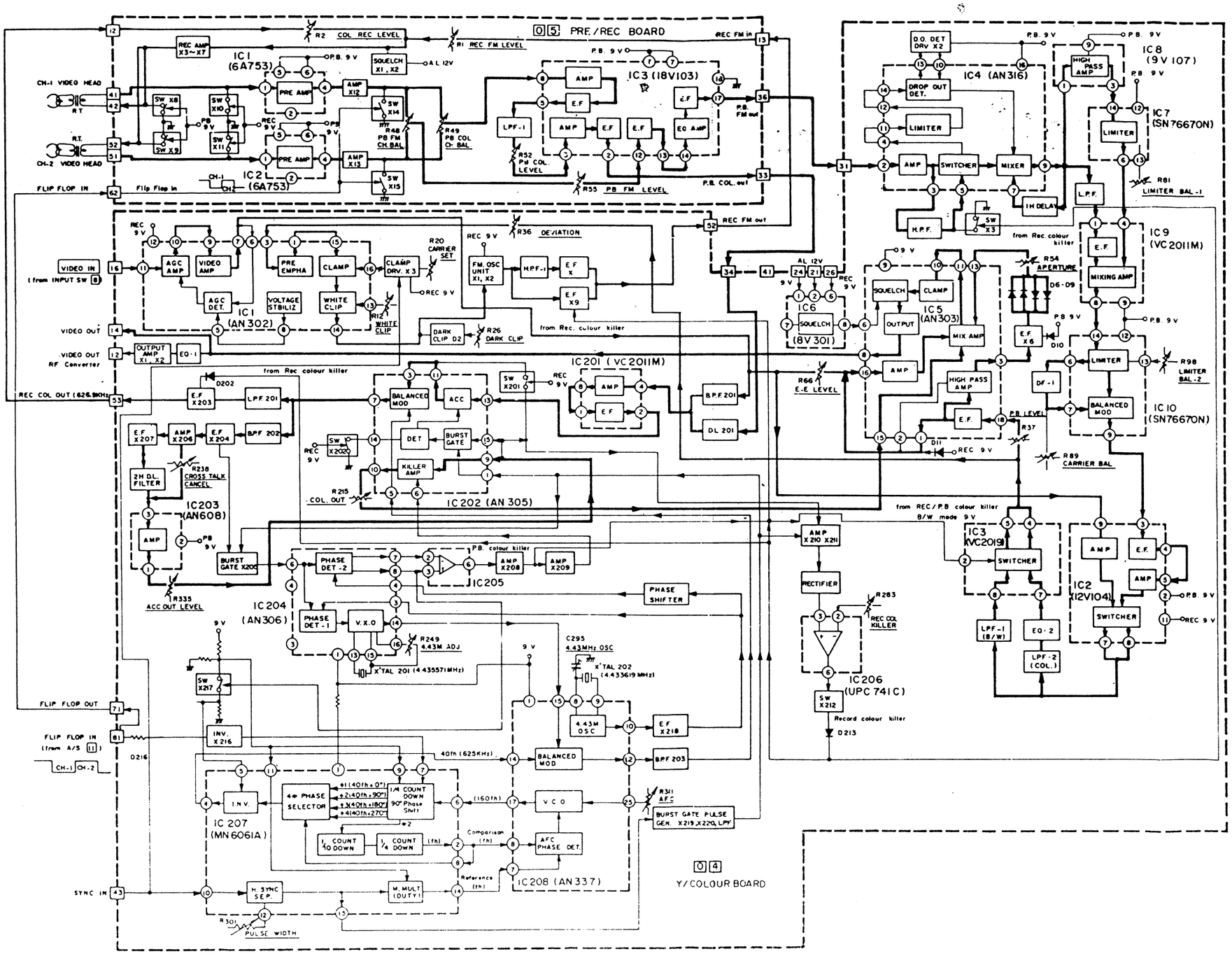
MODEL	C 26	C 30	L 9	C 51
HR-4100EG	0.022	0.022	82 m	0.012
HR-4100EK	150P	150P		

NOTE: 1. Unless otherwise specified;
All resistance values are in ohms, 1/8 W.
All capacitance values are μF.

2. All voltages are DC-measured with a V.T.V.M at record mode.

HR-4100E


NOTE
CONN. NAME
COLOR CODE
P.C.B. NO NAME
CONN NO
CONNECTOR
CONN NO
P.W.B NO
NO P. C. B.
01 CONNECTOR
02 CAP. & REG
03
04 Y. & COLOR
05 PRE & REC
06 AUDIO & SERVO
07 JUMP BOARD
08 MECHA CON
09 OPERATION
10
11 TAPE GUARD
12
13
14
15 HEAD
16 R/P CTL A.E.H
17 FULL E.H
18 L E D
19 START SENSOR
20 END SENSOR
21
22 POWER TR (1)
23 POWER TR (2)
24 TERMINAL
25
27 POWER TR (3)
06 AUDIO / SERVO
CTL. HEAD
MANU FIX
P.U. HEAD
A. E. HEAD
F. E. HEAD
R/P HEAD
04 Y & COLOR
05 PRE & REC
15 HEAD
RF CONV.
01 CONNECTOR
PINCH ROLLER SOLENOID S11 (PINCH)
STOP SOLENOID
08 MECHA CON
11 TAPE GUARD
19 START SENSOR
20 END SENSOR
S10 (SEARCH)
(COUNTER) S9
22 POWER TR (1)
18 L E D
23 POWER TR (2)
CH-1 V HEAD
(1o 2 4 TERMINAL)
CH-2 V HEAD
DRUM F G
DEW SENSOR
S8 (UL-2)
S6 (AL)
(CASS) S12
S7 (UL-1)
02 CAP & REG
09 OPERATION
CAP MOTOR
DRUM MOTOR
27 POWER TR (3)
CAP F G
CASS LAMP
10P CAMERA CONNECTOR
4P CON
BATTERY

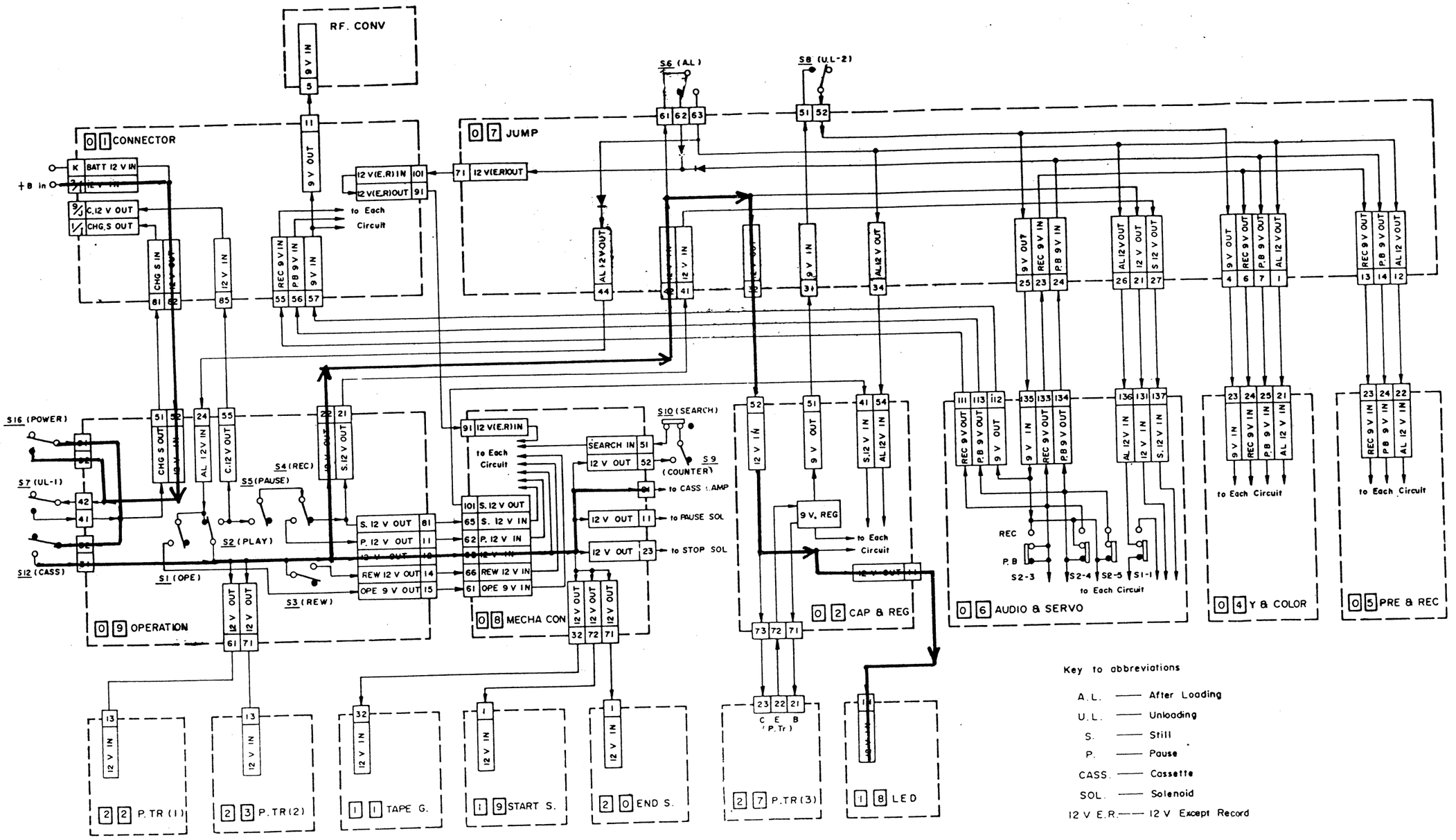


Key to abbreviations

ACC	:	Automatic Color Control
A.L. 12 V	:	After Loading power supply (12 V)
B.P.F.	:	Band Pass Filter
CH.	:	Channel
COL.	:	Color
COMP.	:	Compressor
CONV.	:	Converter
DET.	:	Detector
E.F.	:	Emitter Follower
H.P.F.	:	High Pass Filter
INV.	:	Inverter
LIM.	:	Limiter
L.P.F.	:	Low Pass Filter
MOD.	:	Modulator
SW.	:	Electronic Switch
V.X.O.	:	Variable Crystal Oscillator

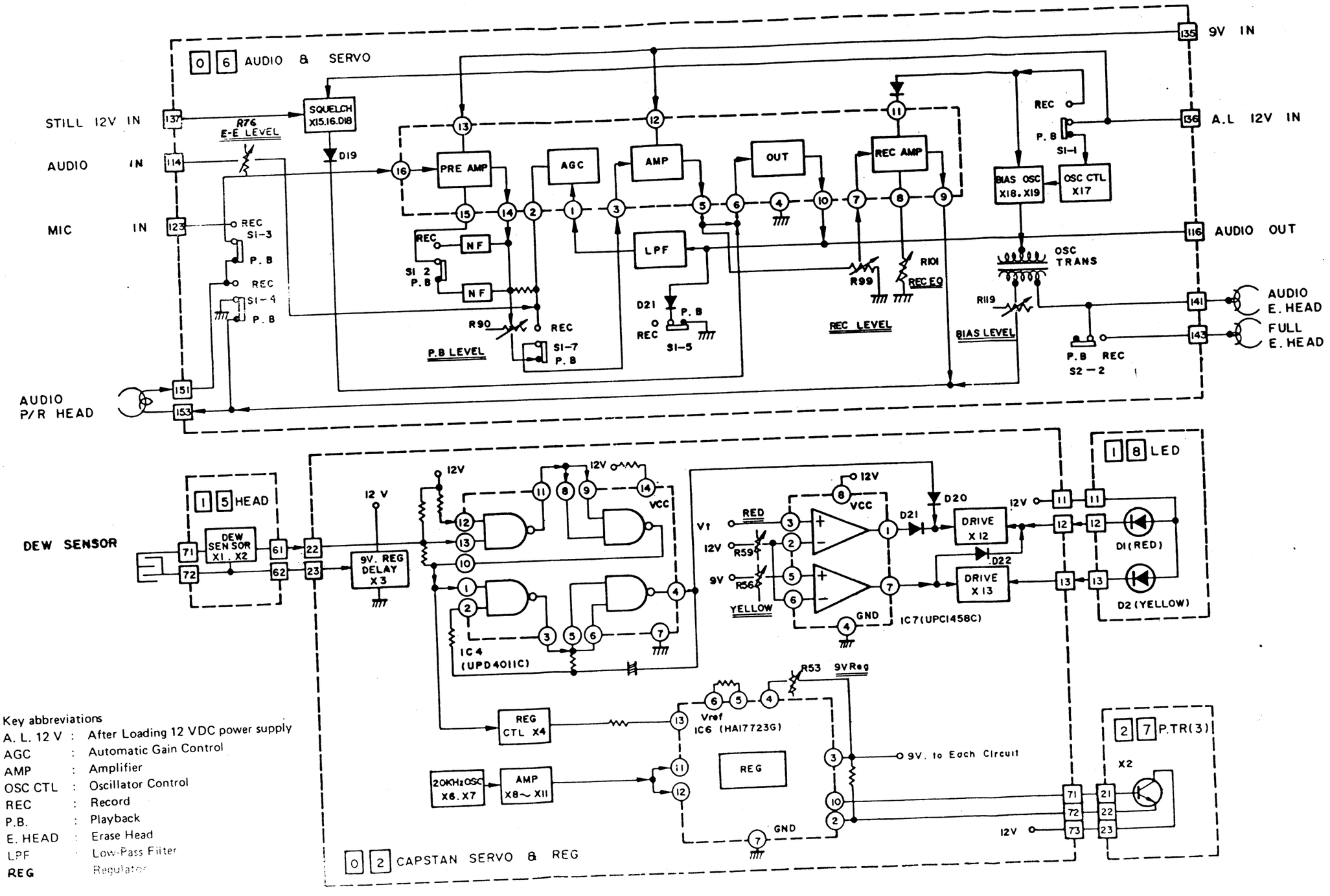
B + LINE

HR-4100E



Key to abbreviations

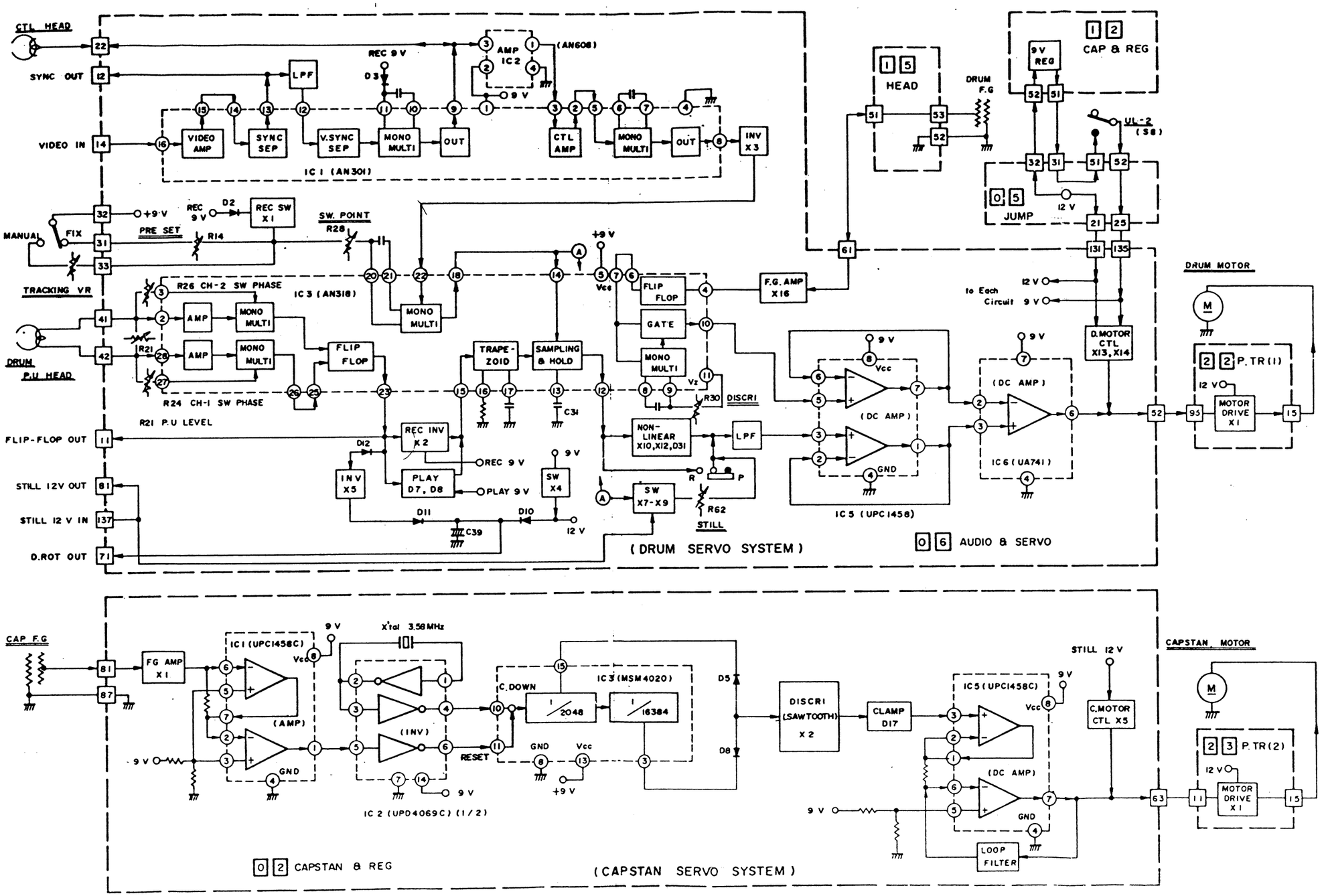
A.L. —— After Loading
U.L. —— Unloading
S. —— Still
P. —— Pause
CASS. —— Cassette
SOL. —— Solenoid
12 V E.R. —— 12 V Except Record



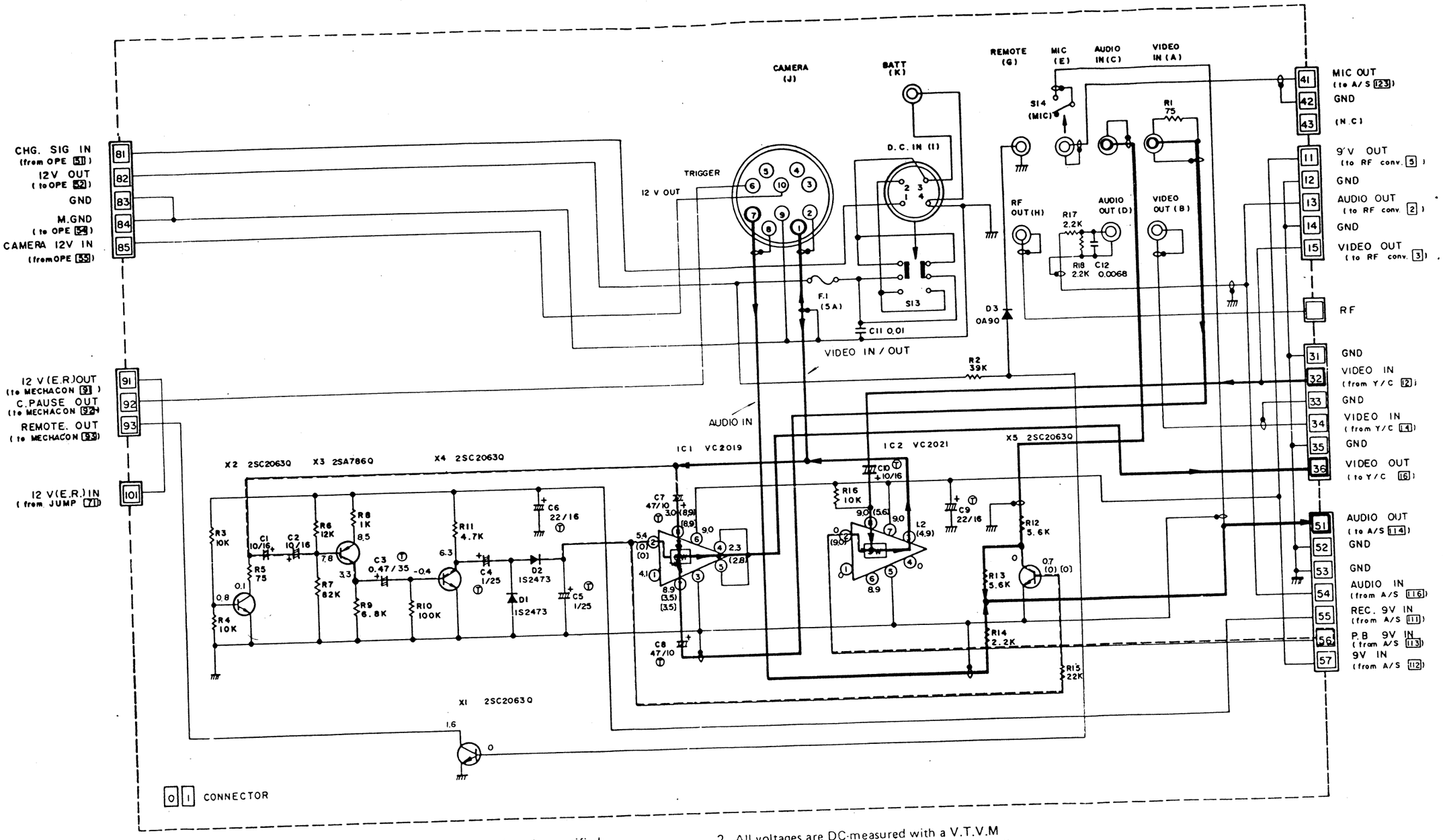
Key abbreviations

A. L. 12 V	:	After Loading 12 VDC power supply
AGC	:	Automatic Gain Control
AMP	:	Amplifier
OSC CTL	:	Oscillator Control
REC	:	Record
P.B.	:	Playback
E. HEAD	:	Erase Head
LPF	:	Low-Pass Filter
REG	:	Regulator

SERVO BLOCK DIAGRAM **HR-4100E**



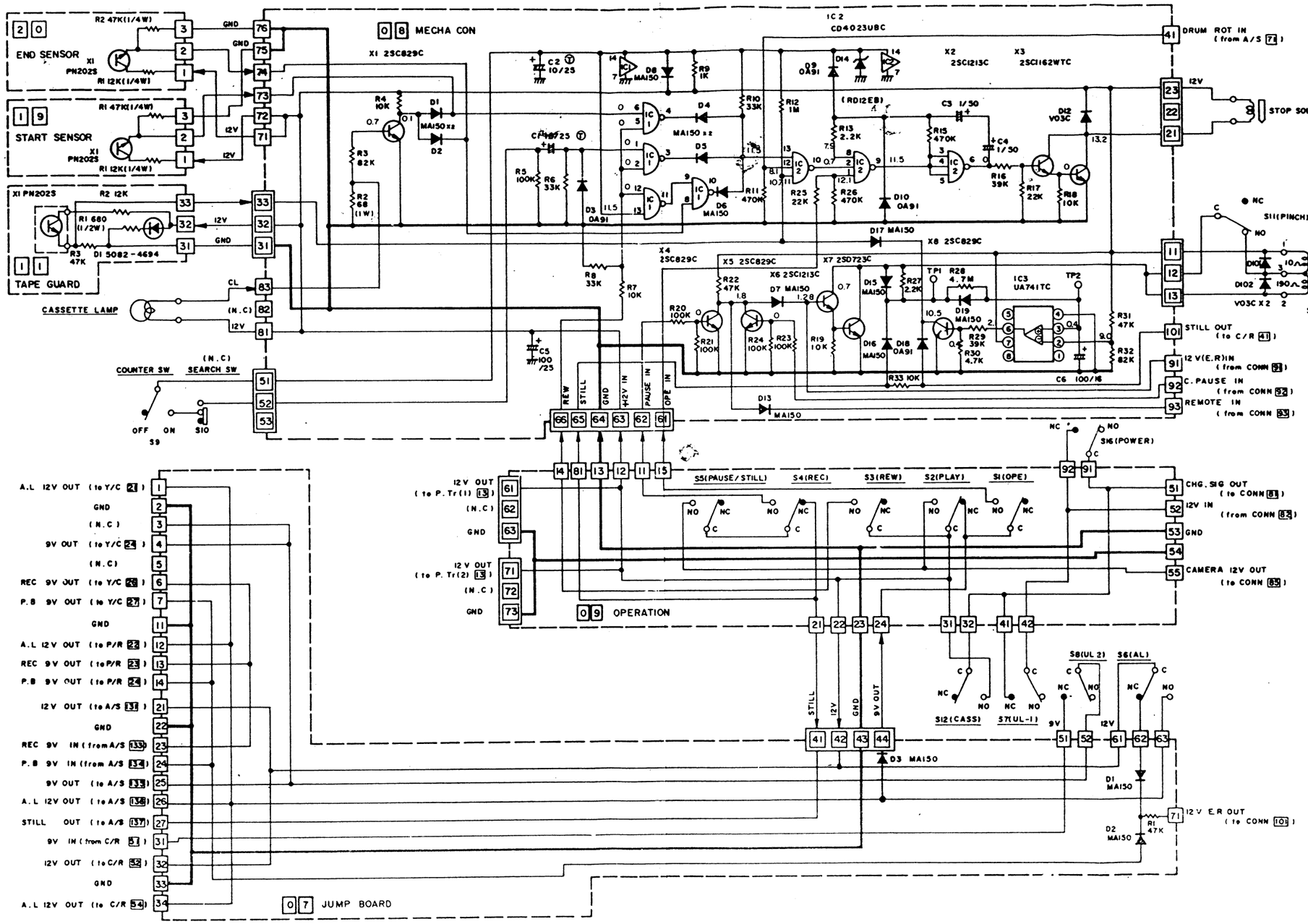
CONNECTOR SCHEMATIC DIAGRAM **HR-4100E**



NOTE: 1. Unless otherwise specified;
All resistance values are in ohms, 1/8 W.
All capacitance values are μF.

2. All voltages are DC-measured with a V.T.V.M at record mode when operating camera normally.
( ) represents the DC voltage at playback mode.
[ ] represents the DC voltage at record mode without camera connection.

MECHANISM CONTROL, OPERATION AND JUMP BOARD SCHEMATIC DIAGRAM HR-4100E

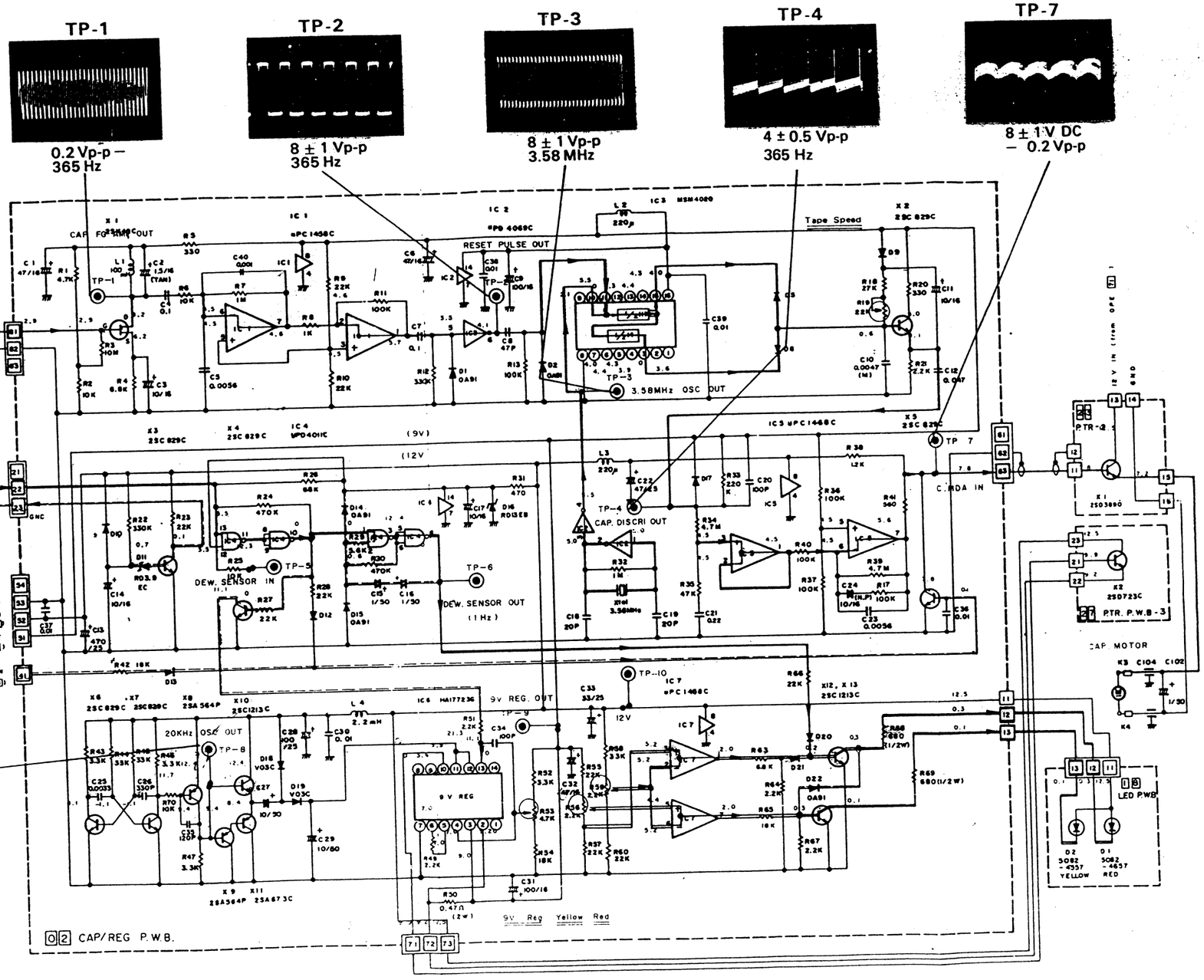


NOTE: 1. Unless otherwise specified;
All resistance values are in ohms, 1/8 W.
All capacitance values are μF.

2. All voltages are DC-measured with a V.T.V.M at record mode.

0.13 CAPSTAN SERVO AND REGULATOR SCHEMATIC DIAGRAM

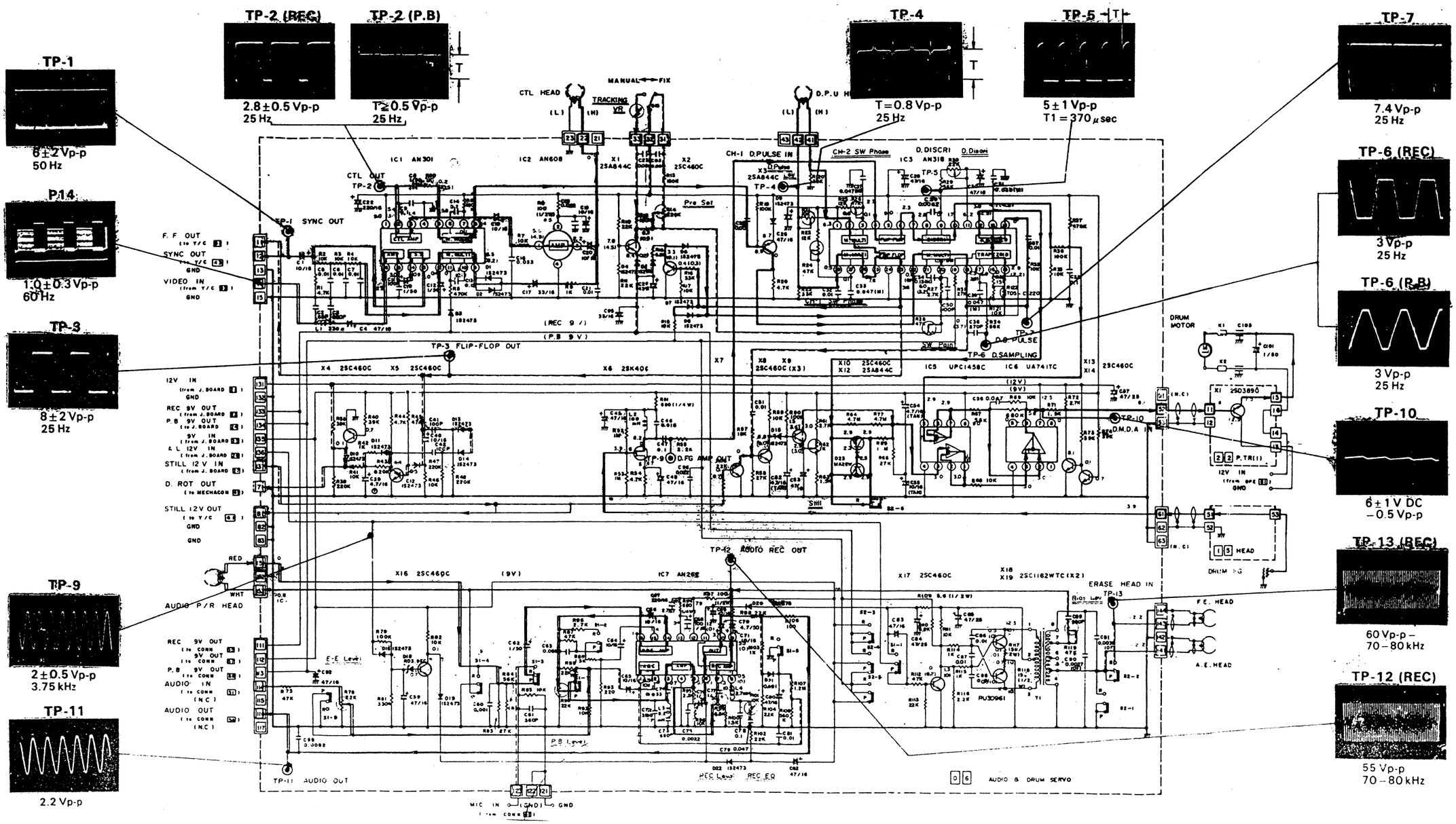
HR-4100E



NOTE: 1. Unless otherwise specified;
All resistance values are in ohms, 1/8 W.
All capacitance values are μF.

2. All voltages are DC-measured with a V.T.V.M at record mode.

HR-4100E


TP-1
6±2 Vp-p
50 Hz
P.14
1.0±0.3 Vp-p
60 Hz
TP-3
8±2 Vp-p
25 Hz
TP-9
2±0.5 Vp-p
3.75 kHz
TP-11
2.2 Vp-p
TP-2 (REC)
2.8±0.5 Vp-p
25 Hz
TP-2 (P.B)
T≧0.5 Vp-p
25 Hz
TP-4
T=0.8 Vp-p
25 Hz
TP-5
5±1 Vp-p
T1 = 370 μsec
TP-7
7.4 Vp-p
25 Hz
TP-6 (REC)
3 Vp-p
25 Hz
TP-6 (P.B)
3 Vp-p
25 Hz
TP-10
6±1 V DC
−0.5 Vp-p
TP-13 (REC)
60 Vp-p −
70−80 kHz
TP-12 (REC)
55 Vp-p
70−80 kHz
TP-1 SYNC OUT
TP-2 CTL OUT
TP-3 FLIP-FLOP OUT
TP-4 D.PULSE IN
TP-5 D.DISCRI
TP-6 D.SAMPLING
TP-9 D.FG AMP OUT
TP-10 D/A IN
TP-11 AUDIO OUT
TP-12 AUDIO REC OUT
TP-13 ERASE HEAD IN
CTL HEAD
TRACKING VR
MANUAL ⟷ FIX
IC1 AN301
IC2 AN608
IC3 AN318
IC5 UPC1458C
IC6 UA741TC
IC7 AN282
X1 2SA844C
X2 2SC460C
X3 2SA844C
X4 2SC460C
X5 2SC460C
X6 2SK406
X7
X8 X9 2SC460C (X3)
X10 2SC460C
X11 2SA844C
X12 2SA844C
X13 2SC460C
X14
X16 2SC460C
X17 2SC460C
X18 X19 2SC1162WTC (X2)
F.F OUT
SYNC OUT
VIDEO IN
12V IN
REC 9V OUT
P.B 9V OUT
9V IN
A.L 12V IN
STILL 12V IN
D. ROT OUT
STILL 12V OUT
AUDIO P/R HEAD
REC 9V OUT
9V OUT
P.B 9V OUT
AUDIO IN
AUDIO OUT
MIC IN
GND
DRUM MOTOR
F.E. HEAD
A.E. HEAD
DRUM PG
D.Pulse
D.Discri
D.Sampling
D/A IN
Pre Set
E-E Level
P.B Level
REC Level
REC EQ
AUDIO & DRUM SERVO